

## WMM PROGRAM CHANGES TO VERSION 2.0

### **geomag.c and magpoint.f**

- Corrected spelling errors in the help text
- Corrected spelling errors in example for latitude (corrected 25.5 for 2 degrees 30 minutes to 25 degrees 30 minutes)
- Added warnings for:
  - Declination at magnetic poles when:
  - $1000\text{nT} < H < 5000\text{nT}$ : Warning: The horizontal field strength at this location is only XXXX nT. Compass readings have large uncertainties in areas where H is smaller than 5000 nT.
  - $H < 1000\text{nT}$ : The horizontal field strength at this location is only XXXnT. Compass readings have VERY LARGE uncertainties in areas where H is smaller than 1000 nT.
  - Geographic poles: Now print NaN only for the quantities which are indeed undefined and give Warning: Location is at geographic pole where X, Y, and declination are undefined.
- Changed resolution to 1 decimal for quantities in nT, and angles to degree and minute
- Clarified that heights are above mean sea level, using the WGS84 reference ellipsoid

### **geomdr.f**

- Corrected altitude bug: asked for elevation in meters but treated input as km (apparently a long-standing error never detected because grids are almost always computed at surface)
- Removed confusing signs and W/S indicators: There were double signs in this display. The program printed a negative number next to a W indicator. For example, -180 or 180W was displayed as -180W.